

## CLAIMS

1. A device for heating liquids (10), particularly milk, comprising a container (12) for the liquid to be heated operatively associated with heating  
5 means,

characterised in that said heating means comprise a heating element (18) delivering variable power over time as a function of the temperature reached by the liquid.

2. The heating device according to claim 1,  
10 wherein said heating element (18) delivering variable power over time as a function of the temperature reached by the liquid, is adapted to reducing the power supplied over time with the increasing temperature of the liquid.

3. The heating device according to claims 1 or 2,  
15 wherein said heating element (18) is positioned so as to heat the bottom (14) of said container (12).

4. The heating device according to the preceding claims, wherein a thermal diffuser (20) is further provided, fitted between said heating element (18) and  
20 the container (12) in order to distribute the heat generated by the heating element (18).

5. The heating device according to claim 4, wherein said thermal diffuser (20) is fitted between said heating element (18) and the bottom (14) of said  
25 container (12) in order to distribute the heat generated

by the heating element (18).

6. The heating device according to claim 5, wherein said thermal diffuser (20) is made in the shape of a small plate or disk in contact with said bottom  
5 (14) of the container (12).

7. The heating device according to one of the claims 4 to 6, wherein said thermal diffuser (20) is made of aluminium.

8. The heating device according to one of the  
10 preceding claims, wherein a thermal sensor (26) operatively connected with said heating element (18) is further provided in order to disconnect it upon reaching a pre-determined temperature.

9. The heating device according to claim 8,  
15 wherein said thermal sensor (26) is adapted to measuring the temperature of the bottom (14) of said container (12).

10. The heating device according to claims 8 or 9 when dependent upon one of the claims 4 to 7, wherein  
20 said heating element (18), said thermal diffuser (20) and said thermal sensor (26), are mounted bundled together on the bottom (14) of the container (12).

11. The heating device according to claim 10, wherein an arm (30) is provided for the fixing of said  
25 heating element (18), of said thermal diffuser (20) and

said thermal sensor (26) to the bottom (14) of the container (12).

12. The heating device according to one of the claims 4 to 7, wherein a thermal sensor (26) is further  
5 provided, operatively connected with said heating element (18) in order to disconnect it upon reaching a pre-determined temperature, and wherein said thermal sensor (26) is in contact with said container through an aperture (28) in the thermal diffuser (20).

10 13. The heating device according to claim 12, wherein said thermal sensor (26) is adapted to measuring the temperature of the bottom (14) of said container (12).

14. The heating device according to claims 12 or  
15 13, wherein said heating element (18), said thermal diffuser (20) and said thermal sensor (26), are mounted bundled together on the bottom (14) of the container (12).

15. The heating device according to claim 14,  
20 wherein an arm (30) is provided for the fixing of said heating element (18), of said thermal diffuser (20) and said thermal sensor (26) to the bottom (14) of the container (12).

16. The heating device according to one of the  
25 preceding claims, wherein a closing element (32) is

further provided, adapted to housing said heating element (18).

17. The heating device according to claim 16, wherein said closing element (32) is adapted to being  
5 mounted externally to the bottom (14) of said container (12).

18. The heating device according to claim 17, wherein said closing element (32) is adapted to supporting the container (12).

10 19. The heating device according to one of the claims 16 to 18, wherein said closing element (32) is adapted to housing an electrical connector (34) for supplying said heating element (18).

20. The heating device according to one of the  
15 claims 10 to 15, wherein a closing element (32) is further provided, adapted to housing said thermal diffuser (20), said thermal sensor (26), said heating element (18) and an electrical connector (34) fitted between said closing element (32) and the bottom (14) of  
20 the container (12).

21. The heating device according to one of the preceding claims, wherein a piston is additionally provided, adapted to be fitted into the container (12) in order to emulsify the liquid, particularly the milk,  
25 with air.

22. The heating device according to one of the claims 4 to 7, wherein a layer of conductive paste is interposed between the heating element (18) and the thermal diffuser (20).

5        23. The heating device according to one of the claims 4 to 7, wherein a layer of conductive paste is interposed between the thermal diffuser (20) and the bottom (14) of the container.